



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,639	08/08/2001	Bhaves N. Desai	ATT-026AUS	3173

22494 7590 01/26/2005

DALY, CROWLEY & MOFFORD, LLP  
SUITE 101  
275 TURNPIKE STREET  
CANTON, MA 02021-2310

EXAMINER

AMINZAY, SHAIMA Q

ART UNIT	PAPER NUMBER
----------	--------------

2684

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/924,639

Applicant(s)

DESAI ET AL.

Examiner

Shaima Q. Aminzay

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## ***DETAILED ACTION***

### ***Response to Amendment***

The following office action is in response to Amendment, filed September 14, 2004.

Claims 1, and 31 are amended, claims 2-30, and 32 are previously amended, and claims 16, and 33 are canceled. Claims 1-15, and 17-32 are pending.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a ) Patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

1. Claims 1, 2, 3, 11, 25, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rasanen (Rasanen et al. U. S. Patent Number 6128322) in view of Robinett (Robinett et al. U. S. Patent 6351474), and further in view of Chen (Chen et al. U. S. Patent 5943604)

Regarding claims 1 and 25, Rasanen discloses a method of telecommunication system which includes sending data from a transmit site to a receive site (column 3, lines 11-13, and lines 38-40), the method comprising:

dividing a transmit data stream having a first bit rate into multiple data streams (see for example, column 3, lines 26-27); transmitting each of the multiple data streams over a plurality of RF channels that can change dynamically (see for example, column 3, lines 28-37, and column 8, lines 61-64, column 9, lines 15-22), wherein at least one of the RF channels serves a plurality of users (see for example, column 9, lines 19-21; Abstract, lines 7-12); and recombining the multiple data streams at the receive site to provide a receive data stream having a bit rate equal to the first bit rate (see for example, column 9, lines 22-29).

However, Rasanen does not disclose specifically each of the multiple data streams having a bit rate which is lower than the first bit rate, and cable network connections.

In related art, Robinett discloses each of the multiple data streams having a bit rate with the first bit data stream having one or more predetermined bit rates which is indicating that the multiple data stream having lower bit rate than the first bit rate (see for example, column 11, lines 20-30).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Robinett's communication system and method of multiplexing bit streams with Rasanen's networks high-speed data transmission to provide network communication system and method "which support the rate adaptation of different transmission rates in high-speed data transmission utilizing parallel traffic channels" (Rasanen, column 3, lines 11-14).

Robinett does not specifically disclose the cable network connections.

In related art, Chen discloses the cable network connections (see for example, Figures 1-6, column 1, lines 8-11, columns 3, lines 64-67 continued to column 4, lines 1-12, column 6, lines 39-55, cable network and connections to the groups of users (plurality of users)).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Chen's cable network connections with Robinett's communication system and method of multiplexing bit streams with Rasanen's networks high-speed data transmission to provide cable network communication system and method that is "reliable, efficient, and cost-effective" (Chen, column 6, lines 32-36).

Regarding claim 31, Rasanen discloses a method of sending data stream having a first bit rate into multiple data streams (see for example, column 3, lines 26-27, and Abstract, lines 1-6); and transmitting each of the multiple data streams over a plurality of RF channels (see for example, column 3, lines 28-37, and column 8, lines 61-64, column 9, lines 15-22), wherein at least one of the RF channels serves a plurality of users (see for example, column 9, lines 19-21; Abstract, lines 7-12).

However, Rasanen does not disclose each of the multiple data streams having a bit rate which is lower than the first bit rate, and cable network connections.

In related art, Robinett disclose each of the multiple data streams having a bit

rate with the first bit data stream having one or more predetermined bit rates which is indicating that the multiple data stream having lower bit rate than the first bit rate (see for example, column 11, lines 20-30).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Robinett's communication system and method of multiplexing bit streams with Rasanen's networks high-speed data transmission to provide network communication system and method "which support the rate adaptation of different transmission rates in high-speed data transmission utilizing parallel traffic channels" (Rasanen, column 3, lines 11-14).

Robinett does not specifically disclose the cable network connections.

In related art, Chen discloses the cable network connections (see for example, Figures 1-6, column 1, lines 8-11, columns 3, lines 64-67 continued to column 4, lines 1-12, column 6, lines 39-55, cable network and connections to the groups of users (plurality of users)).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Chen's cable network connections with Robinett's communication system and method of multiplexing bit streams with Rasanen's networks high-speed data transmission to provide cable network communication system and method that is "reliable, efficient, and cost-effective" (Chen, column 6, lines 32-36).

Regarding claims 11 and 32, Rasanen and Robinett teach claims 1 and 31,

and further Rasanen teaches the plurality of RF channels is provided having a different carrier frequency (see for example column 2, lines 3-6, and column 5, lines 49-53).

Regarding claims 2, and 3, Rasanen and Robinett teach claim 1, and further Rasanen teaches wherein data is sent from the transmit site to a plurality of receive sites (see for example, column 3, lines 38-40, and lines 55-60), and wherein data is sent from a plurality of transmit sites to a receive site (see for example, column 3, lines 38-40, and lines 55-60).

2. Claims 4-10, 12-15, 17-24, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rasanen (Rasanen et al. U. S. Patent Number 6128322) in view of Robinett (Robinett et al. U. S. Patent 6351474), and in view of Chen (Chen et al. U. S. Patent 5943604), and further in view of Oz (Oz et al. U. S. Patent 6434141).

Regarding claims 4, 5, 13, 15, and 27, Rasanen, Robinett, and Chen teach claim 1. However, Rasanen Robinett, and Chen do not teach the multiple data streams are packetized, and a plurality of virtual links over each RF channel between send and receive sites; and distributing packets over the plurality of virtual links in a controlled fashion, and wherein the virtual links are established via a MAC-layer process.

Oz teaches the multiple data streams are packetized (see for example, column (see for example, column 3, lines 63-65), and a plurality of virtual links over each RF channel between send and receive sites (see for example, column 5, lines 42-47); and distributing packets over the plurality of virtual links in a controlled fashion (see for example, column 5, lines 38-48), and wherein the virtual links are established via a MAC-layer process (see for example, column 19, lines 10-14).

It would have been obvious to one of ordinary skill in the art at the time invention was made to combine Rasanen, Robinett, and Chen's cable network communication system and method of multiplexing bit streams and high-speed data transmission with Oz's communication management method to provide a novel method and system for managing the existing cable modem technology (for example DOCSIS standard), and broadband network (column 3, lines 28-31).

Regarding claim 6, Rasanen, Robinett, Chen, and Oz teach claim 5, and further, Oz teaches the controlling fashion is via load balancing (see for example, column 8, lines 10-14).

Regarding claim 7, Rasanen, Robinett, Chen, and Oz teach claim 5, and further, Oz teaches the controlled fashion takes into account scheduling policies (see for example, column 12, lines 29-34).



Regarding claims 8, 9, 10 and 29, Rasanen, Robinett, Chen, and Oz teach claims 1, 4, and further, Oz teaches to maintain a separate queue for each of the plurality of RF channels and placing each packet into one of the separate queues (see for example, column 10, lines 28-30, 33-36, and column 11, lines 35-43); and transmitting the packet on each of the plurality of RF channels in a predetermined order queues (see for example, column 13, lines 54-56, and column 15, lines 23-29). and recombining each of the packets received from the RF channel into a single data stream by taking packets from the queues in a predetermined order (see for example, column 11, lines 35-39).

Regarding claims 12, 23, and 24, Rasanen, Robinett, Chen, and Oz teach claims 1, and further, Oz teaches at least one of the channels which carries one of the multiple data streams also carries data used by at least one other user (see for example, column 11, lines 39-40), wherein the original user and the new user receive data over a different number of RF channels (see for example, column 11, lines 39-40, 64-67, and column 12, lines 1-3), and at least one channel not used by the original user (see for example, column 11, lines 58-60; Figure 1, 132, and 130).

Regarding claims 14, 26, and 28, Rasanen, Robinett, Chen, and Oz teach claims 1, 4, and further, Oz teaches the tunneling process is an IP tunneling process (see for example, column 7, lines 63-67, column 8, lines 1-3).

Regarding claim 17 Rasanen, Robinett, Chen, and Oz teach claims 1, and further, Oz teaches the channels are carried over a CATV plant (see for example, column 8, lines 43-47, cable modem).

Regarding claim 18, Rasanen, Robinett, Chen, and Oz teach claims 1, and further, Oz teaches the receive data streams are carried over an optical fiber (see for example, column 1, lines 36-39).

Regarding claims 19, and 20, Rasanen, Robinett, Chen, and Oz teach claims 1, and further, Oz teaches each of the plurality of RF channels are adjacent in frequency and not adjacent in frequency (this is the router's task, see for example column 5, lines 6-7, and column 10, lines 32-42).

Regarding claims 21, and 22, Rasanen, Robinett, Chen, and Oz teach claims 1, and further, Oz teaches the plurality of RF channels are provided as DOCSIS channels (see for example, column 10, lines 36-42).

Regarding claim 30, Rasanen, Robinett, Chen, and Oz teach claims 14, and further, Oz teaches the transmit site utilizes a TCP (see for example, column 11, lines 47-52).

### ***Response to Arguments***

3. Applicant's arguments filed September 14, 2004 with respect to claims 1-15 and 17-32 have been considered but are **moot** in view of the new ground(s) of rejection. The new grounds of rejections are based on the amended features "cable network".

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

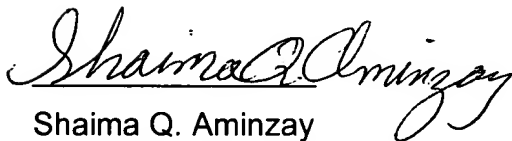
Art Unit: 2684

The prior art made of record considered pertinent to applicant's disclosure,  
see PTO-892 form.

### Inquiry


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 703-305-8723. The examiner can normally be reached on 7:00 AM -5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shaima Q. Aminzay

(Examiner)

  
EDWARD F. URBAN  
SUPERVISOR, PATENT EXAMINER  
TECHNOLOGY CENTER 8000

Nay Maung

(SPE)

Art Unit 2684

January 24, 2005